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CLAIM AMENDMENTS:

Please amend Claims 1-4 as follows:

1. (Currently Amended) An image pickup apparatus comprising:
an image pickup unit having an array of a plurality of photodetection elements;
a light-emitting element unit for emitting reference light having a predetermined frequency;
a wave synthesizer for synthesizing ~~incident~~ image light from an ~~optical image object~~ and the reference light from said light-emitting element unit, and for guiding the synthesized light to said image pickup unit; and
a filter for extracting a difference frequency between a frequency of ~~the light comprising an optical image of an~~ from the object and said frequency of the reference light, from outputs of said plurality of photodetection elements of said image pickup unit,
wherein said light-emitting element unit changes said predetermined frequency of the reference light in accordance with said difference frequency extracted by said filter.
2. (Currently Amended) An apparatus according to claim 1, wherein ~~the predetermined frequency difference is~~ said light-emitting element unit changes said predetermined frequency so that said difference frequency becomes 0.

3. (Currently Amended) An apparatus according to claim 1, wherein ~~the predetermined frequency difference is~~ said light-emitting element unit changes said predetermined frequency so that said difference frequency becomes constant.

4. (Currently Amended) An apparatus according to claim 1, wherein ~~the predetermined frequency difference is~~ said light-emitting element unit changes said predetermined frequency so that said difference frequency becomes modulated according to a predetermined rule.

5. (Original) An apparatus according to claim 1, wherein said light-emitting element unit is provided in common to each of the photodetection elements.

6. (Original) An apparatus according to claim 1, wherein said light-emitting unit includes a semiconductor laser.

7. (Original) An apparatus according to claim 1, further comprising a microlens array provided for each of the photodetection elements.

8. (Original) An apparatus according to claim 1, wherein said wave synthesizer comprises a light waveguide provided for each of the photodetection elements.

9. (Cancelled)

10. (Cancelled)

11. (Original) An apparatus according to claim 1, further comprising an optical system for focusing light on said image pickup unit, and a signal processing circuit for processing an output signal from said image pickup unit.

12. (Previously Presented) An apparatus according to claim 1, wherein said apparatus includes a plurality of more than two of said image pickup units for use in obtaining a combined image.